

Steps to Success with Bareroot Liner Herbaceous Perennials

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Summary

Walters Gardens founded in 1946 is a major producer of field-grown herbaceous perennial liners and has an extensive breeding

program. The field production program is discussed.

INTRODUCTION

Walters Gardens was founded in 1946 in Zeeland, Michigan by Dennis and Harriet Walters. While it started out with only 5 acres of bareroot field production, it has grown to encompass over 1500 acres of fields and 12+ acres of greenhouse, with construction underway on four additional acres. In 1976, Walters Gardens started one

of the first tissue culture labs in the industry, which helped to establish it as a leader in perennial plants, and has also been instrumental in the Walters Gardens breeding program. Walters Gardens partnered with Proven Winners in 2010 and provides the majority of the herbaceous perennial genetics for that program.

Currently, Walters Gardens is a grower of perennial liners and has an extensive breeding program under the direction of John Walters and Hans Hansen.

BAREROOT LINERS

Field Production

Of our 1500+ acres of field space, about 1200 is actively farmed. We rotate crops to rebuild our soils, so in any given year we typically have just under 400 acres planted in perennials (**Fig. 1**).



Figure 1. Field production herbaceous perennials at Walters Gardens

Field crops are started mainly from small 72-count liners planted directly into the fields in spring, with planting beginning in late March and wrapping up by early July. The liners are planted using modified vegetable transplanters, all GPS driven (**Fig. 2**). The harvest begins in late fall and the majority of crops are only in the field for one season before being harvested the same year as they were planted, with a few exceptions that are grown for two or more seasons before harvesting.

Hibiscus is a spring-dig only, as well as fresh dug lavender and other crops to supplement the fall harvest.

Walters Gardens worked with an engineer to design equipment specialized for digging perennials in the sandy soils, and we now have multiple fleets for harvesting our 12-million+ plants that were planted this year in our fields.



Figure 2. Liners are planted using modified vegetable transplanters.

Benefits of Bareroot Liners

Our largest grade bareroot liners come in 25 to a box, which is a nice small quantity that our smaller customers appreciate. Most of the bareroot crops are stored frozen after being harvested and those that aren't frozen are stored in coolers, so they are dormant and acclimated to cold temperatures, which makes them much less susceptible to shipping damage during the winter months than actively growing liners are. Due to this cold storage and dormant state at time of planting, bareroot plants can be grown cooler than many plugs or liners, which leads to energy savings for the grower. They are also a great option for going directly outside in early spring when temperatures are still cold outside but inside heated space is at a premium for many customers. Bareroot liners are also easy to schedule due to the fact that they have been vernalized and will bloom the first year after planting. We have done a lot of research at Walters Gardens to

determine finish times at various temperatures. We hold the bareroot liners in freezers/coolers from week 2 to week 26 (beginning of January to end of June), so this allows us to ship bareroot liners to our customers throughout this whole time, enabling customers to cycle plant rather than having to guess at a total number needed from the beginning. A bareroot liner planted later in the spring often catches up to and surpasses earlier planted material due to higher light levels and temperatures, and it also grows to fit the container (Goldfish effect), so a G1 bareroot will fill out a 2-gal container just as well as a 1-gal container with most crops.

Bareroot Liner Inputs and Sizes/Grades

All bareroot liners have been vernalized with the cold treatment beginning in our fields and finishing in our freezers/coolers. Most of the bareroot crops are either a 1-year plant or generously graded divisions of a 1-year plant (**Fig. 3**), with a few exceptions that are held for a longer time in the fields in order to size up properly.



Figure 3. Example of an herbaceous perennial bareroot liner.

While most of the bareroot liners come in the largest G1 size, we do offer smaller G2 and G3 sizes on select crops (**Fig. 4**). These are ideal for using in smaller containers and come in larger quantities per box (100/box G2, 250/box G3).

Handling Bareroot Liners Upon Arrival, Planting

When receiving bareroot liners from Walters Gardens, there are a few steps to take to ensure that the best quality is maintained. Boxes should be opened and inspected to check that roots are firm and relatively dry. Bareroot liners can be stored at cool temperatures (30–45°F) for a few days if planting immediately is not possible, although there are certain crops that should take priority to be planted as soon as possible. Bareroot liners may be trimmed to fit the container, and care should be taken to prevent air pockets around the roots. Various crops have different requirements in terms of what depth the roots should be planted at, and then the best cultural methods should be used to ensure a healthy crop after planting.



Figure 4. Bareroot sizes and grades.